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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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GARDERE / JHIF GARDERE WYNNE SEWELL, LLP 1601 ELM STREET SUITE 3000 DALLAS, TX 75201			EXAMINER DANIELS, MATTHEW J	
			ART UNIT 1791	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/757,330	Applicant(s) MERKLEY ET AL.	
	Examiner MATTHEW J. DANIELS	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 43-45 and 47-67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 43-45 and 47-67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/2/09, 5/18/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. **Claims 43-45, 47-67** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. **As to Claims 43, 51, 59, 62, and 67**, a text search of the published application revealed that there is no disclosure of the range 30-45% cementitious binder, 38-60% ground silica, and it is unclear if there is support for the range of 6 to 8 hours. While certain portions of the specification disclose values similar to or within the claimed ranges, there is no evidence that the claimed ranges were envisioned by the specification. Other claims are rejected by dependence. Additionally with respect to **Claims 51 and 67**, the specification discloses only that the *treated fibers* are conditioned to a total solid content of about 4% to 90%, rather than conditioning the *individualized fibers* which would include the untreated fibers. Additionally, **As to Claim 44**, there appears to be no support for the claimed times. **As to Claim 45**, there is no support for the claimed temperatures. **As to Claims 66 and 67**, the specification does not support the limitation excluding this particular alkali metal aluminate component.

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2. **Claim 48** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **As to Claim 48**, this claim contradicts the 1-28 hour treatment time of Claim 43.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 43, 51, 67** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ulfstedt (US 2,880,101) in view of Rozman (Improvements of Fibreboard Properties through Fibre Activation with Silane, Intern. J. Polymeric Mater., Vol. 32, (1996), pp. 247-257) and Naji (WO 97/08111). **As to Claims 43, 51, and 67**, Ulfstedt teaches a method of manufacturing a cement material comprising:

Mixing between 30 and 45% cementitious binder (3:48) and between 38 and 60% ground silica (3:46) to form a cement mixture;

Forming the cement mixture into a cement article of a pre-selected size and shape (molds, 3:68-69);

Precuring the cement article at ambient temperature for 6 to 8 hours (3:73-74);

Autoclaving the cement article for less than 24 hours (4:5-6) in steam (4:3), which would have a temperature between 60 C and 200 C.

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Ulfstedt is silent to the cellulose fibers, individualizing, treating with sizing agent in organic solvent or water, and conditioning the individualized cellulose fibers to a particular solid content.

However, Rozman teaches that pulp fiber (page 248, Experimental Procedure), interpreted to be cellulose fibers which have been individualized, is mixed with a silane/methanol solution (page 248, Experimental Procedure), interpreted to be a sizing agent comprising hydrophilic and hydrophobic functional groups mixed with an organic solvent. The treatment is performed for 3 hours (page 248, Experimental Procedure) and since there is no heating disclosed, it would have been obvious that the temperature was less than 200 C. The treated fibers are then conditioned at least by draining (sentence bridging pages 248-249). Rozman does not specifically teach the claimed mass percentage of silane to fibers and what the solid content was after the draining. However, with respect to the amount of silane used, it is submitted that this is a result effective variable that would have been optimized to ensure complete treatment of all fibers. With respect to the conditioning, Rozman recognizes that draining is required and one would have drained the material until it was of a solid content appropriate for its intended use. One would have found it obvious to incorporate the cellulose fiber of Rozman into the Ulfstedt cement in order to reinforce the cement and to act as a filler, thereby using less cement.

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the fiber of Rozman into the cement of Ulfstedt because (a) Ulfstedt suggests that other fillers may be used (1:42) and Rozman suggests the fiber to form fibreboard composites (title; abstract) and the combination of Rozman's fiber with Ulfstedt's cement would

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form a composite, or (b) Naji teaches that it is known to incorporate cellulose fibers into cement to act as a reinforcement (page 3, lines 7-16) motivating one to make the combination in order to reinforce the product.

As to Claims 44, 45, and 47, Ulfstedt teaches autoclaving for 5-20 hours (4:5-10) and Naji teaches that the autoclaving can occur at higher temperatures between 120 and 200 C (page 4, line 5). **As to Claim 48**, Rozman teaches 3 hours (page 248, Experimental Procedure). **As to Claim 50**, Naji teaches that various fibrous materials, which include inorganic natural fibers and synthetic fibers, can be used (page 3, lines 7-16). **As to Claims 54-56**, Ulfstedt teaches various materials which could be considered density modifiers, such as magnesia (3:49-50), and additives such as aluminum powder (3:14). **As to Claims 57 and 61**, Ulfstedt teaches that the cement mixture consists essentially of sand and cement of quantities substantially similar to the claimed amounts (3:45-50). Naji additionally teaches that when fiber material is added to cement, it may be used in a quantity of 5-12 wt.% (page 3, lines 13-14). **As to Claim 58**, one treating fibers in the manner taught by Rozman would have optimized the amount of fibers in the solution in order to ensure that all fibers had been treated. **As to Claims 59, 60, 62, and 63**, Ulfstedt teaches precuring for periods of time which encompass 8 hours (3:73-74), and Naji teaches autoclaving at temperatures and times which encompass the claimed ranges (page 5, lines 5-6). **As to Claim 66**, the sizing agent of Rozman is free of an alkali metal aluminate.

4. **Claim 52** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulfstedt (US 2,880,101) in view of Rozman (Improvements of Fibreboard Properties through Fibre Activation with Silane, Intern. J. Polymeric Mater., Vol. 32, (1996), pp. 247-257) and Naji (WO 97/08111),

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and further in view of Groombridge (US 2,024,689). Ulfstedt, Rozman, and Naji teach the subject matter of Claim 43 above under 35 USC 103(a). **As to Claim 52**, Ulfstedt is silent to the individualizing conditions. However, both Rozman and Naji suggest individualized fibers. Groombridge teaches a process in which wood chips are subjected to a process which occurs at 180 to 200 C for 2 to 3 hours in order to provide cellulosic material which remains after the extraction (Example 1, page 2). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Groombridge into the modified Ulfstedt process because Rozman and Naji suggest cellulose fibers, and Groombridge teaches a conventional process for providing cellulose fibers.

5. **Claim 53** is rejected under 35 U.S.C. 103(a) as being unpatentable over Ulfstedt (US 2,880,101) in view of Rozman (Improvements of Fibreboard Properties through Fibre Activation with Silane, Intern. J. Polymeric Mater., Vol. 32, (1996), pp. 247-257) and Naji (WO 97/08111), and further in view of Hoskins (WO 99/35330). Ulfstedt, Rozman, and Naji teach the subject matter of Claim 43 above under 35 USC 103(a). **As to Claim 53**, Ulfstedt is silent to the hammermilling, but clearly teaches thermomechanical pulp fibers (See the rejection of Claim 43) which would have been comminuted in some manner. However, Hoskins teaches that comminution of pulp is conventionally accomplished using many processes “well known to those skilled in the art” (page 14, line 19), including, in particular, hammermilling (page 14, line 20). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to incorporate the method of Hoskins into that of Ulfstedt because Ulfstedt suggests

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pulp fibers which must have been comminuted, and Hoskins teaches that hammermilling is a desirable and well known comminution process.

Response to Arguments

6. Applicant's arguments filed 23 March 2009 have been fully considered but are moot in view of the new grounds of rejection above. The arguments appear to be on the following grounds:

- a) The description is presumed to be adequate unless the Examiner has demonstrated why a person of ordinary skill in the art would not recognize in applicant's disclosure a description of the invention defined by the claims.
- b) Schmidt provides that only the mixture of the two components (silanol and aluminate) provides the hydrophobizing effect. New claims recite that the fibers may be (are) treated with a sizing agent in a solvent that lacked alkali metal aluminates, and Schmidt teaches away from silanol in the absence of an alkali metal aluminate.

7. These arguments are not persuasive for the following reasons:

- a) It is submitted that claims which set forth values and boundaries not envisioned in the specification is sufficient to demonstrate that the limitations cited above (See the § 112 rejections) are new matter.
- b) While it is submitted that negative limitations which exclude the material found in Schmidt are new matter, the new reference to Rozman demonstrates that the claimed treatment process is known for cellulose fibers. Also note that Applicants have cited on the enclosed IDS documents

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another reference by Schmidt in which Schmidt uses a silanol/solvent solution which does not include the alkali metal aluminate which Applicants allege Schmidt to require.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action (new curing process claimed and new matter rejections). Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW J. DANIELS whose telephone number is (571)272-2450. The examiner can normally be reached on Monday - Friday, 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571) 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew J. Daniels/
Primary Examiner, Art Unit 1791
6/8/09